

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF SAFETY AND ENVIRONMENTAL ENFORCEMENT
GULF OF MEXICO REGION

ACCIDENT INVESTIGATION REPORT

For Public Release

1. OCCURRED

DATE: **18-JAN-2017** TIME: **0400** HOURS

2. OPERATOR: **Fieldwood SD Offshore LLC**

REPRESENTATIVE:

TELEPHONE:

CONTRACTOR:

REPRESENTATIVE:

TELEPHONE:

- ☐ STRUCTURAL DAMAGE
☐ CRANE
☐ OTHER LIFTING DEVICE
☐ DAMAGED/DISABLED SAFETY SYS.
☐ INCIDENT >\$25K
☐ H2S/15MIN./20PPM
☐ REQUIRED MUSTER
☐ SHUTDOWN FROM GAS RELEASE
☒ OTHER **Casing weld failure**

3. OPERATOR/CONTRACTOR REPRESENTATIVE/SUPERVISOR
ON SITE AT TIME OF INCIDENT:

6. OPERATION:

4. LEASE: **G02646**

AREA: **EB** LATITUDE:
BLOCK: **159** LONGITUDE:

- ☐ PRODUCTION
☐ DRILLING
☐ WORKOVER
☐ COMPLETION
☐ HELICOPTER
☐ MOTOR VESSEL
☐ PIPELINE SEGMENT NO.
☒ OTHER **Plug & Abandonment**

5. PLATFORM: **A**

RIG NAME:

6. ACTIVITY: ☐ EXPLORATION (POE)
☒ DEVELOPMENT/PRODUCTION
(DOCD/POD)

8. CAUSE:

7. TYPE:

- ☐ HISTORIC INJURY
☐ REQUIRED EVACUATION
☐ LTA (1-3 days)
☐ LTA (>3 days)
☐ RW/JT (1-3 days)
☐ RW/JT (>3 days)
☐ Other Injury

- ☐ EQUIPMENT FAILURE
☒ HUMAN ERROR
☐ EXTERNAL DAMAGE
☐ SLIP/TRIP/FALL
☐ WEATHER RELATED
☐ LEAK
☐ UPSET H2O TREATING
☐ OVERBOARD DRILLING FLUID
☐ OTHER _____

- ☐ FATALITY
☐ POLLUTION
☐ FIRE
☐ EXPLOSION

9. WATER DEPTH: **924** FT.

- LWC ☐ HISTORIC BLOWOUT
☐ UNDERGROUND
☐ SURFACE
☐ DEVERTER
☐ SURFACE EQUIPMENT FAILURE OR PROCEDURES

10. DISTANCE FROM SHORE: **85** MI.

11. WIND DIRECTION:
SPEED: M.P.H.

12. CURRENT DIRECTION:
SPEED: M.P.H.

13. SEA STATE: FT.

COLLISION ☐ HISTORIC ☐ >\$25K ☐ <=\$25K

During milling operations on the A-6 well with 3 1/2" drill pipe and 9 5/8" rock bit, the crew started to see plugging of the bit. Personnel initiated reverse circulation methods to unplug the bit when a weld "failure" occurred at the connection of the original 16" casing and a 16" riser that was recently butt-welded onto the original casing. The 16" riser section had a 16" added sleeve (collar) to allow the installation of a 16 3/4" 5M Quick Lok wellhead and a 13 5/8" surface BOP stack. An "All Stop" was initiated and the producing wells were shut in. There were no injuries or environmental spills.

Due to failed bubble test, the BSEE Lake Jackson District required the Operator to install a BOP. The approved permit (RPM) contained no stipulations for hot work (welding). The Operator welded a section of 16" casing to the existing casing, and then welded a sleeve (collar) encompassing both sections of casing. Upon completion of welding, the casing was pressure tested, with multiple failures. This process of welding and testing was completed until the casing was successfully tested to an internal pressure of 1000 psi.

During the operation, the crew began reverse circulating. After receiving normal returns, the crew increased the pump rate to increase barrel flow. At some point, the rock bit packed off, rapidly increasing the pressure in the 16" casing and causing the casing to burst. Based on interviews, the estimated internal pressure on the 16" casing exceeded 2000 psi. Photographs of the burst area indicate failures along the recently welded seams. The burst pressure of the casing prior to the welding operations was 4300 psi, and the RPM stated the maximum anticipated surface pressure (MASP) was 1236 psi. There was no indication the pump safety device(s) set points were adjusted to account for changes due to welding, indicating the hazard analysis associated with the task was insufficient. The JSA provided to BSEE investigators did not address the change in pressure, nor did it address mitigation procedures for "plugged bit."

18. LIST THE PROBABLE CAUSE(S) OF ACCIDENT:

Pump pressure in excess of 2000 pounds per square inch (psi) during reverse circulation operations, resulting in failure of the 16" casing butt-weld and 16" riser welded collar.

19. LIST THE CONTRIBUTING CAUSE(S) OF ACCIDENT:

Exceeded Limitations - BOP's and casing were only tested to 1000 psi.

Inadequate Hazard Analysis - Pump safety devices were not adjusted to account for the decreased burst pressure.

Management of Change - The JSA was not revised to reflect the implemented changes.

20. LIST THE ADDITIONAL INFORMATION:

RPM was submitted and approved to do cold cutting methods only. Hot work was not approved by BSEE. This was an abandonment operations.

21. PROPERTY DAMAGED:

16" casing and collar

NATURE OF DAMAGE:

Split 16" casing and collar

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ESTIMATED AMOUNT (TOTAL):

\$

22. RECOMMENDATIONS TO PREVENT RECURRENCE NARRATIVE:

No recommendations at this time.

23. POSSIBLE OCS VIOLATIONS RELATED TO ACCIDENT: **YES**

24. SPECIFY VIOLATIONS DIRECTLY OR INDIRECTLY CONTRIBUTING. NARRATIVE:

- 1. Lessee P&A crew was unaware of the amount of pressure applied to the BOP stack.**
- 2. Lessee failed to initiate a proper hazard analysis.**
- 3. Lessee failed to revise the Job Safety Analysis (JSA) after the first time the bit became plugged.**
- 4. Lessee utilized hot work practices such as welding instead of the submitted and approved procedures which called for cold work installation.**

25. DATE OF ONSITE INVESTIGATION:

24-JAN-2017

26. ONSITE TEAM MEMBERS:

**Perry Brady / Casey Conklin / James
Holmes /**

29. ACCIDENT INVESTIGATION

PANEL FORMED: **NO**

OCS REPORT:

30. DISTRICT SUPERVISOR:

John McCarroll

APPROVED

DATE: **11-MAY-2017**